

Process Costing Key Points

Process costing is used for mass production – high volumes of standardized product. This makes costing difficult due to the sheer volume of product we are producing and the fact that each product uses a small amount of materials, labor and overhead. Process costing is done in a 5-step Process.

Step 1: Cost accumulation

This section lists all costs in Beginning work in process and adds the costs added during the period to get your Total Costs to Account For.

Step 2: Physical Flow of Units

In this section, we document how many units we had to work on and then disclose what happened to those units – were they finished or not. The calculation is:

$$\begin{aligned} &\text{Beginning work in process units} + \text{units started this period} \\ &= \text{Units completed and transferred} + \text{Ending work in process units} \end{aligned}$$

Step 3: Equivalent Units – Weighted Average

Equivalent units is the process of adding partially completed units together to make whole units since it is easier to calculate with whole numbers. Under the weighted average method, we use only the Units completed and transferred and Ending work in process units from Step 2. You will calculate equivalent units for direct materials, direct labor and overhead. The calculation for equivalent units is:

$$\begin{aligned} &\text{Units completed and transferred} \times 100\% \text{ percent complete} \\ &+ \text{Ending work in process units} \times \text{percent complete} \\ &= \text{Total Equivalent Units} \end{aligned}$$

Note: Ending work in process percent complete can be different for direct materials, direct labor, or overhead. Materials added at the beginning means 100% complete since it has received all its materials. Materials or conversion costs added evenly means use the percent complete given. Remember, conversion costs means direct labor and overhead.

Step 4: Cost per Equivalent Unit – Weighted Average

We add the total costs incurred during the process including beginning work in process and divide by the Total Equivalent Units calculated in Step 3. The formula is applied to direct materials, direct labor and overhead individually (or sometimes just direct materials and conversion costs). The calculation is:

$$\frac{\text{Cost of Beginning work in process inventory} + \text{costs added this period}}{\text{Total Equivalent Units}}$$

Step 5: Assign and Reconcile Costs

In this section, you will use the equivalent units calculated in Step 3 and multiply by the cost per equivalent unit calculated in Step 4. You will do this beginning with units completed and transferred and apply the costs to direct material first, then conversion costs. The result of this step is Cost of Goods Manufactured. The calculations look like this:

Cost assigned to units completed

Direct Materials (equivalent units for direct materials units completed in step 3 x direct material cost per equivalent unit in step 4)

Conversion Costs (equivalent units for conversion cost units completed in step 3 x conversion cost per equivalent unit in step 4).

= Total Costs transferred out (or Cost of Goods Manufactured)

Now, repeat the process using your equivalent units calculated based on Ending Work in Process.

Cost assigned to ending work in process

Direct Materials (equivalent units for direct materials for ending work in process in step 3 x direct material cost per equivalent unit in step 4)

Conversion Costs (equivalent units for conversion cost for ending work in process in step 3 x conversion cost per equivalent unit in step 4).

= Total Costs assigned to Ending Work in Process

Finally, you complete the reconciliation by adding your Total Costs Transferred Out and Total costs assigned to Ending Work in Process to get your Total Costs Accounted For. This should match the cost totals in Step 1.